1. Introduction

Switch reference (SR) is a cover term referring to grammatical markers that appear to track whether the subjects of two clauses are coreferent (Jacobsen 1964:665, 1967, 1998; McKenzie 2015). In Washo (Hokan/isolate; USA), switch reference morphology surfaces on embedded verbs.

⇒ Different subject (DS) morpheme -ˇs appears if embedded subject ≠ higher subject (1):

\[(1) \quad \begin{array}{c}
\text{Emily, t’išimápaw} \quad k’-\acute{e}\text{-}i \quad \text{Emily} \\
1,\text{-šašě\text{-}s-šemu-yi} \\
\text{singer,good} \quad 3\text{-be-IND-DS-NM-ACC} \\
1\text{-know-really-IND} \\
\text{‘I know well that Emily is a good singer.’} \\
\text{Arregi & Hanink (2018)}
\end{array}
\]

⇒ Otherwise, same subject (SS) is realized as ∅ (2):

\[(2) \quad \begin{array}{c}
\text{šáwlamu, t’i:liwu} \quad \text{girl} \\
2,\text{-bújji-} \quad \text{man} \\
\text{hi} \quad 3/3\text{-call-IND-SS-NOM} \\
\text{here} \quad 3\text{-be-IND} \\
\text{‘The girl that called the man is here.’}
\end{array}
\]

There are three ways one could account for reference tracking of this kind:

2. Binding (Finer 1985, Watanabe 2000, Broadwell 1997)

We argue that switch reference in Washo is agreement-based.

2. Switch reference as complementizer agreement

2.1. Washo

Highly endangered Native American language spoken around Lake Tahoe in the United States.

– ≤ 10 elderly native speakers still living.
– Isolate; has been linked to proposed Hokan group (Campbell 1997, Mithun 1999).
– Neutral word order: SOV

2.2. The distribution of SR marking in Washo

Switch reference surfaces in a variety of embedded clause types.

1. Relative clauses (always internally headed in the language):

\[(3) \quad \begin{array}{c}
\text{méhu géwe} \quad ?\text{-fíjy-yi} \quad s\quad \text{lé-sa?} \\
\text{boy} \quad \text{coyote} \quad 3/3\text{-see-IND-DS-NM-ACC} \\
\text{I-pro-also} \quad 1/3\text{-see-IND} \\
\text{‘I also saw the coyote that the boy saw.’} \\
\text{Hanink (2016)}
\end{array}
\]

2. Clausal complements of factive verbs:

\[(4) \quad \begin{array}{c}
\text{Emily t’išimápaw} \quad k’-\acute{e}\text{-}i \quad \text{Emily} \\
1,\text{-šašě\text{-}s-šemu-yi} \\
\text{singer,good} \quad 3\text{-be-IND-DS-NM-ACC} \\
1\text{-know-well-IND} \\
\text{‘I know well that Emily is a good singer.’} \\
\text{=}(1)
\end{array}
\]
3. Temporal clauses:

(5) \[ l-\text{emlu-ya} \ 1\text{-eat-DEP} -\text{ˇs-DS-P} -\text{í:me-P} -\text{leg-i} 3\text{-drink-REC.PST-IND} \]

‘He was drinking while I was eating.’ Washo Archive

Arregi & Hanink (2018): Switch reference in Washo is the result of agreement.
⇒ Cannot be captured with semantic accounts (i.a. Dahlstrom 1982, Stirling 1993, McKenzie 2012).

Switch reference in Washo is subject to locality effects: e.g., it is clause-bound (6).

(6) \[ \text{[súku-P} \ i\text{-dog-ba-N} \ ˚aya-P -\text{e-P} -\text{i} 3\text{-be-IND} -\text{ˇs-DS-ge} ] \ 1\text{P-mó-P} -\text{mo-P} j\text{-woman-b} \text{ó:NI-yi-3/3.call-IND-ˇs-DS-gi} ] \ 3\text{i.i.} \text{enter-IND} . \]

‘The dog who was outside who the woman called came in.’ Arregi & Hanink (2018)

In (6), the subject of the lowest and highest verbs are coreferent (súku? ‘dog’)
But, they are separated by an intermediate different subject (da?mó?mo? ‘woman’).
⇒ Different subject marker surfaces on both embedded verbs.

2.3. Syntactic component: Agree with both subjects

Different subject marker -ˇs is a realization of embedded C (see also Finer 1985; Watanabe 2000).
Consistent with the morpheme ordering inside embedded clauses: DS is clause-peripheral.


(7) a. \[ \text{[mé:hu-P} \ géwe-P -\text{í:gi-yi-3-see-IND} -\text{ˇs-DS-ge} ] \ 1\text{P-le:sa-P} -\text{j-sa-P} ] \ 1/3\text{-see-IND} \]

‘I also saw the coyote that the boy saw.’

b. \[ \text{[TP} \ \text{mé:hu-P} \ géwe-P -\text{í:gi-yi-3-see-IND} -\text{ˇs-DS-ge} ] \ 1\text{P-pro-also 1/3-see-IND} \]

‘I also saw the coyote that the boy saw.’

An example with the different subject marker:

(8) a. \[ \text{[DP[NOM]} \ ... \ [DP[NOM]} \ ... \ [C]} \ ... \ C] \]

Step 1: Multiple Agree

\[ \text{[TP} \ \text{mé:hu-P} \ géwe-P -\text{í:gi-yi-3-see-IND} -\text{ˇs-DS-ge} ] \ 1\text{P-pro-also 1/3-see-IND} \]

‘I also saw the coyote that the boy saw.’

b. \[ \text{[TP} \ \text{mé:hu-P} \ géwe-P -\text{í:gi-yi-3-see-IND} -\text{ˇs-DS-ge} ] \ 1\text{P-pro-also 1/3-see-IND} \]

‘I also saw the coyote that the boy saw.’
2.4. Postsyntactic component: The exponence of feature conflict

Both indices are copied onto C and are visible at Spell-Out.

C can have more than one ID feature (as long as the values are distinct).

Harbour (2007, 2011) on number in Kiowa:
Feature conflict allowed in the syntax, exploited by the morphology as a type of inverse marking.

The different subject marker is the reflex of such feature conflict.

Deriving DS/SS optionality in cases of overlap in Washo:

In cases of reference overlap, SS and DS are optional:

‘We (=Adele and I) are drinking the coffee Adele brought.’

b. l-é:ši,j gö:beʔ l-é:meʔ-i
Adele, ga-sú:biʔ-i -O -ge
I.PRO-DU coffee 1-drink-IND
‘We (=Adele and I) are drinking the coffee Adele brought.’

(13) [Emily 3.talk-IND -{DS, SS} Adele and Emily 3.talk-IND
‘Adele, and Emily, they are talking while Emily, is sitting.’

(14) [Adele ida Emily wagay’ay-a -{S, O} | Embedded Sbj ⊂ Matrix Sbj
Emily 3.talk-IND -DS, SS | Emily 3.write-IND
‘Emily, is writing while Adele, and Emily, are talking.’

Two more additions to the analysis:

(15) a. The value of [ID] in plural DPs has one index for each individual in its referent.
(Sportiche 1985).

b. In Washo, Agree copies exactly one index from the value of [ID].

3. Reference overlap in an Agree-based account

In cases of reference overlap, SS and DS are optional:

‘We (=Adele and I) are drinking the coffee Adele brought.’

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Deriving DS/SS optionality in cases of overlap in Washo:

(16) [DP[|iː| ... C[|iː|,j] | DP[|iː|,j] Copy same index from plural DP as singular DP SS

(17) [DP[|iː| ... C[|iː|,j] | DP[|iː|,j] Copy different index from plural DP as singular DP DS

Extension to other languages:

(18) Index Probe Parameter
Agree copies all/exactly one index in the value of [ID] in the Goal.

(19) [DP[|iː| ... C[|iː|,j] | DP[|iː|,j] Copy all indices from plural DP DS

Correct prediction for languages of North America:
In overlap cases, SS can be optional DS/SS or obligatory DS
The generalization is more complex:

- In North America (McKenzie 2015): languages exist with (i) optional DS/SS, and (ii) obligatory DS. Obligatory SS languages are unattested, but this may be due to an absence of relevant data.

- Obligatory SS languages are claimed to exist in Papua-New Guinea (Roberts 2017), but:
  - The reported paradigms are not exhaustive, or the claim is not supported by negative evidence (e.g. Bruce 1984 for Alamblak, Roberts 1987 for Amele.)
  - Person and number are often relevant, suggesting an analysis in which the Probe copies features other than [iD], with potentially complex consequences for exponent.

Partial control is unidirectional:

\[ \text{not possible if referent of PRO is a subset of matrix referent:} \]

\[ \text{Prediction for overlap cases: DS and SS should have the same distribution as anaphors & pronouns, but they don’t in many languages (Rooryck 2006):} \]

\[ \text{(24) In overlap cases, pronouns are obligatory} \]

\[ \text{a. I saved us.} \]

\[ \text{b. *I saved ourselves.} \]

\[ \text{(25) But lower referent must be a subset of higher referent} \]

\[ \text{We saved *me/myself.} \]

But, Washo SR is optionally DS or SS, and subset relation can go either way, as in (22), (23).

The conclusion is tentative, as we need to replicate reflexive/pronoun patterns in Washo.

4. Reference overlap patterns: Evidence against alternative accounts


- Georgi 2012: SS expresses control of the embedded subject by the matrix subject.

- Baker and Camargo Souza 2018: SS is agreement by C with the embedded subject and the operator in Spec-CP. The latter is controlled by the matrix subject.

\[ \Rightarrow \text{SS in cases of overlap predicted as cases of partial control:} \]

\[ (20) \]

\[ \text{a. Mary wanted to assemble in the hall. Mary } \subset \text{ PRO} \]

\[ \text{b. Sue expected to go on vacation together. Sue } \subset \text{ PRO} \]

Partial control is unidirectional: not possible if referent of PRO is a subset of matrix referent:

\[ (21) \]

\[ \text{*Sue and John expected to go on vacation by herself. PRO } \subset \text{ S&J} \]

But SS (and DS) in Washo is bidirectional:

\[ (22) \]

\[ \begin{array}{ll}
\text{Emily gê:gel-a -{ς, Ø} & Adele ida Emily wagayá-i} \\
\text{Emily 3.sit-DEP -{DS, SS} & Adele and Emily 3.talk-IND} \\
\end{array} \]

\[ \text{‘Adele, and Emily, are talking while Emily is sitting.’} \]

\[ (23) \]

\[ \begin{array}{ll}
\text{Adele ida Emily wagayá-a -{ς, Ø} & Emily bašá-i} \\
\text{Adele and Emily 3.talk-DEP -{DS, SS} & Emily 3.write-IND} \\
\end{array} \]

\[ \text{‘Emily, is writing while Adele, and Emily, are talking.’} \]

An additional argument by Clem (2018): Embedded argument can be overt.

5. Conclusion

In SR, reference tracking is the result of agreement:

1. Agree from embedded C gathers the indices of the tracked arguments in the syntax.

2. Agree with matrix subject is Upward.

3. The post syntactic exponence of the probe is sensitive to the resulting index feature specifications.

For Washo, this provides a correct account for overlap cases, where alternatives fail.

- Index Probe Parameter predicts that in overlap cases, SR is optional DS/SS or obligatory DS.

Much more fieldwork needs to be done to (dis)confirm the prediction.

References


Harbour, Daniel. 2007. Morphosemantic number: From Kiowa noun classes to UG number features. Dordrecht: Springer.


Hicks, Glyn. 2009. The derivation of anaphoric relations. John Benjamins.


